Environmental Science is a two-semester course designed to explore the biological, physical, and sociological principles related to the environment in which organisms live on Earth. Students will learn about natural systems, biogeochemical cycles, the nature of matter and energy, and the flow of matter and energy through living systems. They will also examine populations, communities, ecosystems, ecological pyramids, biodiversity, and the relationships between renewable and nonrenewable natural resources and land use. Case studies of environmental challenges introduce each content lesson and acquaint students with real-life environmental issues, debates, and solutions. Scientific and engineering practices are embedded throughout the course, including forming and testing hypotheses, making and evaluating claims, and using logic and evidence to draw conclusions. Lab, field, and virtual investigations reinforce critical thinking, writing, and communication skills and help students develop a deeper understanding of the nature of science. Throughout this course, students have the opportunity to understand how biology, earth science, and physical science are applied to the study of the environment, and how technology and engineering contribute to solutions for studying and creating a sustainable biosphere.

The materials needed for this course include specified lab materials.

Length: Two Semesters

Unit 1: Introduction to Environmental Science

- What Is Science?
- Science and the Environment
- Doing Science: Introduction to Environmental Science
- Introduction to Environmental Science Wrap-Up

Unit 2: Earth's Physical Systems

- The Hydrosphere
- The Lithosphere
- The Atmosphere
- Doing Science: Earth's Physical Systems
- Earth's Physical Systems Wrap-Up

Unit 3: The Biosphere

- Nature of the Biosphere
- Matter and Energy in the Biosphere
- Ecosystems and Biomes
- The Biosphere Wrap-Up

Unit 4: Ecology

- Populations
- Communities

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- Changes in Ecosystems
- Doing Science: Ecology
- Ecology Wrap-Up

Unit 5: Semester 1 Wrap-Up

- Semester 1 Wrap-Up

Unit 6: Humans and the Environment

- Human Societies
- Earth's Natural Resources
- Land Use and Its Effects
- Doing Science: Humans and the Environment
- Humans and the Environment Wrap-Up

Unit 7: Environmental Challenges

- Resource Availability
- Pollution and Waste Management
- Environmental Change
- Doing Science: Environmental Challenges
- Environmental Challenges Wrap-Up

Unit 8: Politics and the Environment

- The Concept of the Commons
- National Environmental Policies
- Global Environmental Policies
- Doing Science: Politics and the Environment
- Politics and the Environment Wrap-Up

Unit 9: Sustainability for the Future

- The Global Community
- Sustainable Practices
- Doing Science: Sustainability for the Future
- Sustainability for the Future Wrap-Up

Unit 10: Semester 2 Wrap-Up

- Semester 2 Wrap-Up

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